Philosophical foundations and research relevance: issues for information research

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Introduction

The wide world of information research has been in a state of continuous change ever since I became involved in it - and certainly before. My first attempt to engage in research was a survey of cataloguing practices and this was followed by a bibliometric investigation into the British Journal of Sociology. Neither of these early efforts saw the light of day: indeed, the second was never completed as I was having to write programs in Fortran II to analyse the data, while teaching myself the programming language at the same time. An invitation to do something else (i.e., to spend a year as a visiting lecturer at the University of Maryland) that came along at the time (1969) was welcome!

Since then, my forays into research have involved library co-operation, information-seeking behaviour, office automation, business information needs, networked learning, digital libraries, mobile computing, information overload and one or two other things besides. I have to admit that there has been very little holding the studies together and this is partly the result of needing to bid to whatever programme was flavour of the month with the

relevant funding agency - for many years, the British Library R & D Department.

Not surprisingly, therefore, I have never perceived 'librarianship and information science' (LIS) as a single discipline and I began to think of why it cannot be.

The non-cohesive nature of information research

The proposition that research in the information field (LIS for short) lacks cohesion is, I think, fairly obvious. There are very few areas in which continuous research over a period of years has tackled specific problems, or sought an understanding of particular phenomena. Information retrieval is one of them and even here there are different groups, often non-competing, and often engaging in their work oblivious to work on related areas. Consider, for example, text retrieval and chemical structure retrieval systems - very few people have done work in both of these areas and one of them, Peter Willett (2000), has recently explored the connections. Information behaviour research is another area where there is some degree of cohesion around models and methods that have won some support (e.g., Wilson, 1981, 1999; Dervin, 1992; Kuhlthau, 1994) and, in that field, there is, perhaps, a developing consensus on an appropriate framework for investigation.

Why is there a lack of cohesion and connection? My own answer to this question is very simple: we do not have a single 'research object' - certainly, we are all interested in 'information', but that is not a single phenomenon, as reference to the theory of integrative levels can show.

The English philosopher Herbert Spencer appears to be the first to set out the general idea of increasing complexity in systems (Spencer, 1862). The term

itself was first used by the English biochemist (and scholar of Chinese science) Joseph Needham (1937). The following quotation from a Web source provides an insight into the fundamentals of the theory:

> *(a) The structure of integrative levels rests on a physical foundation. The lowest level of scientific observation would appear to be the mechanics of particles. (b) Each level organizes the level below it plus one or more emergent qualities (or unpredictable novelties). The levels are therefore cumulative upwards, and the emergence of qualities marks the degree of complexity of the conditions prevailing at a given level, as well as giving to that level its relative autonomy. (c) The mechanism of an organization is found at the level below, its purpose at the level above. (d) Knowledge of the lower level infers an understanding of matters on the higher level; however, qualities emerging on the higher level have no direct reference to the lower-level organization. (e) The higher the level, the greater its variety of characteristics, but the smaller its population. (f) The higher level cannot be reduced to the lower, since each level has its own characteristic structure and emergent qualities. (g) An organization at any level is a distortion of the level below, the higher-level organization representing the figure which emerges from the previously organized ground. (h) A disturbance introduced into an organization at any one level reverberates at all the levels it covers. The extent and severity of such disturbances are likely to be proportional to the degree of integration of that organization. (i) Every organization, at whatever level it exists, has some sensitivity and responds in kind. (Union of International Associations, 2002)*

The idea of integrative levels is widely employed today in comparative psychology, biochemistry, biology, environmental science, and many other areas. The Classification Research Group employed it in the UK as a basis for ideas on the development of a new classification scheme in the 1970s (Wilson, 1972; Foskett, 1978) but it appears to have dropped out of sight in our field since then.

What is the relevance of this for the concept of information? Quite simply, 'information' is a concept that takes different forms at different integrative levels. When the computer scientist manipulates information, he or she

manipulates units of complexity such as bits and bytes (with the byte having a different level of complexity than the bit). The information retrieval specialist, on the other hand, conceives of information in terms of strings of symbols, matching query strings against indexed strings. The librarian sees information in terms of the macro containers; books, reports, journals and, now, electronic documents of various kinds, and, indeed of a higher level of organization, the library itself. In other words, information itself is not a unitary concept, but has different levels of organization, around which different theories are built and practices evolved. Consequently, there cannot be a unitary information science, but only different approaches to information from the perspective of the integrative level involved.

From a philosophical perspective, therefore, we need to ask, "At what level of organization do we intend our research to be?" In the context of research on information behaviour, I take the level to be that of the document, broadly defined, searched for by the information user. I say, 'broadly defined', because I would include in 'document' not only the electronic forms but also extracts from such documents as well as 'messages' of other kinds (e.g., such as those conveyed in face-to-face communication). I am interested, more specifically, in the interaction of the information seeker with the potential sources of useful information and with the question of which philosophical perspective is most appropriate to research in this field.

Phenomenology as an integrative framework

If we accept that 'information science' is predominantly a social science (and there may be those present who do not) it is particularly striking that over the past 50 years or so there has been a shift in information research from a predominantly positivist model of the world to a predominantly phenomenological perspective. The evidence is there in the literature. For

example, if we look at the papers prepared for the Royal Society Scientific Information Conference (Report…, 1948) we find, perhaps not surprisingly, given the sponsoring organization, that the majority are prepared from a positivist perspective - the emphasis is upon counting things and occurrences of events. We learn little from the papers about the behaviour of scientists, or their motivations, or about the context in which their information needs arise, or about what factors affect their judgements. We do learn about the length of scientific papers (Read, 1948), on various aspects of botanical journals (Royal Botanic Gardens, 1948), and on the mechanization of UDC (Holmstrom, 1948) but we learn little of deeper significance. Given the changes in the technology of information delivery since 1948 it is not surprising that the papers have a somewhat antique air about them and there appears to be little of relevance to the present-day behaviour of scientists, simply because behaviour per se was not the subject of investigation. Ten years later, when the successor conference was held, this time, significantly, in the USA (International…, 1959), with many more papers, the same paradigm prevailed, although, occasionally, a more sophisticated sociological approach was evident, for example, in Scott (1959).

Since the 1980s, however, there has been a shift in research methods towards the employment of so-called qualitative methods. (and, as an aside, it is interesting that the positivist view persisted in information science in North America for much longer than in Europe). However, method without a philosophical framework that determines why a particular method is employed and what view of reality the researcher holds, is purely mechanistic. The choice of an appropriate research method should be determined by a combination of the philosophical position of the researcher vis-à-vis the research objectives, the nature of the problem to be explored, its novelty in research terms, and the time and resources available to carry out the work. The leap that students, in particular, make from statement of the

problem to data collection without the benefit of a perspective to guide either the choice of problem or the choice of method is one of the principal reasons for the relatively low level of a great deal of research in the field.

Implicit in the choice of qualitative methods is a relationship to a phenomenological perspective on the nature of reality, and our ability to understand it and gain knowledge of it. What, then, is phenomenology?

A thorough analysis of the basis of phenomenology would take us back to the distinction between Plato's world of ideas and Aristotle's world of the senses, and from those founders of philosophy, via Descartes, the British Pragmatists of the early 18th century, especially Hume, to Kant and Kierkegaard and thence to Husserl in the 20th century. However, we can sensibly begin with Husserl, since his impact on the philosophy of the social sciences in the 20th century can be said to be dominant. Many disciplines have a phenomenological perspective because of what they owe to Husserl. Phenomenological sociology, phenomenological psychology, Gestalt psychology, and existentialism all owe something to Husserl's work and a map of his impact would reveal Martin Heidegger (his most famous student), Alfred Schutz, Jean-Paul Sartre, Maurice Merleau-Ponty, Max Wertheimer, Kurt Koffka, Wolfgang Köhler, Hans-Georg Gadamer and, more recently, Peter Berger and Thomas Luckman and the 'social constructivists', as influenced by his ideas - even if, in the cases of Heidegger and of Garfinkel and ethnomethodology, the influence took the form of reaction.

Husserl, accepting the Cartesian duality of mind and body, proposed that we need to focus upon human experience of the world, rather than on the world itself and, indeed that the 'real world' should be 'bracketed', that is, put aside from consideration while we focus on the individual experience. Phenomenology seeks to understand how persons construct meaning and a

key concept is intersubjectivity. Our experience of the world, upon which our thoughts about the world are based, is intersubjective because we experience the world with and through others. Whatever meaning we create has its roots in human actions, and the totality of social artefacts and cultural objects is grounded in human activity. Heidegger, his most famous student, took an essential opposite view, rejecting the Cartesian position and recognizing that human experience is experience of something and that something, apart from the workings of our own mind, consists of the external world from which we derive our stimuli. Although never a student of Husserl, Alfred Schutz communicated with him for many years and, in fact, was offered the position of assistant to Husserl at Freiburg, and attempted to develop a phenomenological sociology based on the concept of intersubjectivity and evolving concepts of human communication and the individual's stock of knowledge that strike a chord in information science.

In information science today, we see the impact of phenomenology in a number of tendencies, revealed most strongly in research on information behaviour. The growth in the popularity of qualitative research methods in this field stems from a realisation that the mere counting of occurrences of actions (such as borrowing books or buying journals) is inadequate for an understanding of the aims and motivations of the information seeker. I 'discovered' the work of the phenomenological sociologist Alfred Schutz in about 1973 or 1974 and my paper a few years later (Wilson, 1981) was strongly influenced by that discovery.

Later, Kuhlthau (1994) chose the words 'seeking meaning' for the title of her book to convey the idea that that is what the information seeker is doing: seeking meaning in his/her life and work or study and research. To understand the process of seeking meaning we have to do more than count occurrences, we have to undertake a deep analysis of what the information

seeker believes s/he is doing, of what the intention is in the acts employed to discover information, and in what the information found means to the information user.

The qualitative interview is the source method in phenomenology and has been transferred not only into information science, but also into psychology, educational psychology, counselling, psychiatry and many other disciplines. However, the theoretical ideas that we may take from phenomenology are of greater significance. For example, in a related 'information area', that of the behaviour of TV newsroom journalists, Altheide (1977) uses theoretical concepts from the phenomenological sociology of Alfred Schutz to analyse their life-world. In particular, he uses the concepts of shared understanding, stock of knowledge, and recipe knowledge to explore how newsroom journalists work together and how their actions appear strange to the 'outsider', e.g., the person they may be interviewing. Altheide then goes on to suggest that the shortcomings of Schutz's theoretical concepts throws us back to a more detailed exploration of the life-world of people and to an existential sociology as a means of seeking an understanding of the differences in behaviour rather than of the invariant aspects of behaviour that Schutz's model-building approach implies. There is, of course, a paradox here, in that existentialism is itself a by-product of phenomenology.

The phenomenological approach has also been employed in our own field: Ng (2002) uses Schutz's phenomenological sociology to explore the importance of plans in the process of information searching using the idea of the 'sedimentation' of repeated actions and cognitive constructs into recipes within the individual stock of knowledge. These ideas were explored in a comparison of naïve and experienced information searchers and the extent to which each type deviated from planned actions in search tasks. The null hypothesis was that there would be no difference in deviation and this

hypothesis was not supported: *'…when the searchers were familiar with the situation or context (high familiarity with RLIN searching and/or high familiarity with subject matter), they would have less degree of plan deviation comparing to those who were not familiar with the situation of context.'* In other words, the sedimented recipe knowledge of the experienced user enables him or her to formulate plans for action and to adhere to those plans, whereas the naïve user is more likely to deviate from the original search plan.

There are, of course, other bodies of work that can be shown to have, at least, a phenomenological 'flavour', although the authors concerned might not agree with my perception of their work. For example, I have already mentioned the work of Kuhlthau, and it is clear that Dervin's work (e.g., 1992, 1996) is also grounded in a phenomenological understanding of human action.

However, it is not only in our own field that the phenomenological viewpoint is gaining attention - in the next section I examine some work in the fields of information systems and human-computer interaction.

Phenomenological perspectives in related fields - information systems and HCI

Although I have chosen to talk about the social science aspects of information science, it is interesting to see that related fields, which also deal with information at one or other of the integrative levels, have also turned to phenomenology as a framework for exploration. For example, in the field of information systems research (which has a much more active interest in theoretical questions than does information science, a number of writers have adopted a phenomenological perspective. For example, Mingers (2001) draws upon phenomenology to argue that the Cartesian separation of mind and

body, which provided the basis for philosophical thinking into the twentieth century is denied by phenomenologists such as Heidegger and Merleau-Ponty. The latter having argued that mind and body are essentially inter-related in the psychology of perception and that our perception of the world is itself 'embodied'.

In computer science, Dourish, incorporating ideas from Heidegger and Schutz, argues that:

> *'…phenomenology turns our attention to how we encounter the world as meaningful through our active and engaged participation in it, and so we can see that the underlying purpose of this sort of "more natural" approach to interface design is that it allows us to engage with technology in a different way - in ways that allow us to uncover, explore and develop the meaning of the use of the technology as it is incorporated into practice. As a design concern, then, this places limits on how we think about applying social and physical interaction models to interactive systems. The design concern is not simply what kinds of physical skills, say, we might be able to capitalize upon in a tangible interface, or what sorts of contextual factors we can detect and encode into a ubiquitous computing model. Instead, we need to be able to consider how those skills or factors contribute to the meaningfulness of actions.'*

It is interesting to see that Dourish turns our attention to 'the meaningfulness' of actions. I have commented elsewhere, and more than once, that the attention given to the use of information has been much less than that given to, for example, information seeking and information searching. I believe that, in part at least, this is the result of seeking guidance on the development of systems and services and that information technology has caused us to favour these areas rather than encouraging to consider how those activities lead to 'meaningfulness of actions'. If a phenomenological stance did no more than encourage us to address this issue, it would still be worthwhile. Information behaviour should be more concerned with how information is converted into use - into meaningful practice.

Again, in the information systems field, Ciborra has identified the lack of a phenomenological perspective as one of the shortcomings of that area. He notes:

> *'Disciplines inspired by the paradigm of the Galilean method such as ours, tend to disregard the fundamental role of the everyday life world of the agents, users, designers, managers, and the messiness and situatedness of their acting, while privileging the geometric worlds created by system methodologies. In such a way, one key element gets to be neglected: human existence, which represents the essential ingredient of what information is, of how the life world gets encountered, defined and described.' (Ciborra, 1998: 9)*

Ciborra concludes his piece by noting that,

> *'It is not time for calculation, but for a sort of deep contemplation of the everyday life surrounding the design and use of technology. Let truth be always our goal, but understood as the Greek word 'Aletheia': the unveiling of what lies hidden behind the current phenomena of work, organization and information.' (Ciborra, 1998: 16)*

In the related area of computer-aided design, Coyne, et al. have noted:

> *'The empirical model applied to systems development inherits the problems of empiricism generally (as outlined by Popper), and empirical studies in psychology and social science, requiring tightly controlled conditions and precisely circumscribed terms. For human subjects it is difficult to provide the necessary (ideal) isolation of conditions, and their knowledge of the experimental procedure influences the results.' (Coyne, et al., 2002: 266)*

In adopting a phenomenological perspective, Coyne and his colleagues draw upon Heidegger's (1971) concept of 'disclosure' to demonstrate that new features of a system draw attention to, or 'disclose', aspects of behaviour that previous protocols did not mention. In this case, it was the importance of 'eye contact' between the (geographically remote) tutor and student in the design

process, which emerged as significant because of the video link incorporated in the system.

Quite by chance, I also discovered that my colleagues Nigel Ford and Barry Eaglestone are involved in the MOZART project, supported by the European Union, on the development of computer-assisted musical composition. Although they have not specifically identified a phenomenological approach to the problems they are using qualitative methods of research, including audio- and video-recording, together with qualitative interviews to explore in greater depth the interactions between the composer and the computer system than has hitherto been employed in this area. (Eaglestone, *et al.*, 2001)

The relevance of research - ideas from information systems

Moving on to the second theme in my paper, possibly some people here will recall the debate on the JESSE mailing list earlier this year on the question of the relevance for practice of LIS research, and vice-versa (JESSE, 2002). This kind of debate is not uncommon in areas of research that have a close connection to a field of practice - it occurs in social work, education, and information systems, for example. And it is from the information systems field, as being closest to our own, that I draw an analysis that may be useful to us. Benbasat and Zmud (1999) explored, *'…why most IS academic research today lacks relevance to practice…'*, and you will notice that the question is 'why', not 'whether'! The reasons they adduce are interesting for us, falling as they do into the following categories:

an emphasis on rigour over relevance; that is, a concern to establish an academic discipline on the traditional model, rather than seeking to address the concerns of information system practitioners;

lack of a cumulative tradition; partly because of the diverse nature of the information systems field and its related research, making it difficult for one specialist even to understand the work of another;

the dynamism of technology; which adds uncertainty and complexity to the field and results in researchers 'chasing after practice rather than leading practice';

limited exposure to relevant contexts; 'In order that IS research be relevant, IS researchers must in some form or another be exposed to the practical contexts where IT-related usage and management behaviors unfold. For many IS-academicians, such exposure tends to occur infrequently and, when it does occur, tends to be insufficiently targeted, insufficiently rich, or both.'; and, finally,

institutional and political factors; meaning, briefly, that in many situations tenure and promotion decisions, as well as the grant-awarding policies of various agencies, assume attention to rigour, rather than to relevance.

As one reads Benbasat and Zmud it becomes increasingly evident that our two fields are affected by almost exactly the same factors when it comes to the relationship between research and practice. The authors go on to propose nine recommendations for improving the situation, which are too extensive to quote directly here, but two link in with the overall theme of the paper:

> ***Recommendation 5****: In order for IS researchers to be more proactive in a direct sense, it is imperative that the IS research community produce cumulative, theory-based, context-rich bodies of research.*

and

> ***Recommendation 6****: In order for IS research to be more relevant, it is important that authors develop frames of reference which are intuitively meaningful to practitioners to organize complex phenomena and to provide contingency approaches to action.*

From relevance to phenomenology

Where does this consideration of relevance take us with regard to philosophical frameworks? If Recommendations 5 and 6 from Benbasat and Zmud apply to information science, as I believe they probably do, then my proposition would be that both require us to adopt a philosophical framework of reference that can support those recommendations. I would also propose that, if we wish to understand the world of the information user and his or her actions in settings where information is made available by one means or another, we need to have conceptual tools that have been designed to foster that understanding. As you will by now expect, I suggest that phenomenology offers those conceptual tools, whether we derive them from work in sociology, psychology, education, or any other discipline.

My reasons for suggesting this are fairly simple: first, phenomenology relates to understanding meaning in social interaction and in individual actions in the world. It explores why individuals act the way they do, what common understandings arise among them, what ideal types of behaviour we can identify, and so on. All of these are relevant to the more socially-oriented aspects of information science.

Secondly, the positivist perspective may provided a guide for policy, because of its reliance on the law of large numbers to provide generalizable conclusions (this is what the Royal Society Scientific Information Conference and its successor conference ten years later was aiming for), but:

- before we can explore problems using large-scale survey techniques, we need to have a sound understanding of those problems at the level of their meaning for the individual affected; and
- the level of understanding reached of individual behaviour by employing phenomenological methods is more directly appealing to practitioners, more readily perceived as relevant, because they appreciate the researcher's emerging understanding of their situation, they are aware that whatever conclusions may result are likely to be based on an intimate awareness of the details of their life-world.

There is a further reason for adopting a clear, coherent philosophical approach to our understanding of the world and our attempts to understand it. That is, we can then firmly ground our attempts at research education in that philosophical framework and convey to students the understanding that method alone is not sufficient for a research programme, we (and they) need a firm place upon which to stand, if we want to move (or at least change) the world.

References

- Altheide, D.L. (1977) 'The sociology of Alfred Schutz', in: Jack D. Douglas and John M. Johnson, eds. *Existential sociology*. Cambridge: Cambridge University Press. 133-152
- Benbasat, I. and Zmud, R.W. (1999) 'Empirical research in information systems: the practice of relevance.' *MIS Quarterly*, **23**, 3-16
- Ciborra, C.U. (1998) 'Crisis and foundations: an inquiry into the nature and limits of models and methods in the information systems

discipline.' *Journal of Strategic Information Systems*, **7**, 5-16

- Coyne, Richard, Park, Hoon and Wiszniewski, Dorian (2002) "Design devices: digital drawing and the pursuit of difference." *Design Studies* **23** (2002) 263-286
- Dervin, B. (1992). 'From the mind's eye of the user: the sense-making qualitative-quantitative methodology.' in: J.D. Glazier and R.R. Powell, *eds. Qualitative research in information management*. (pp. 61-84.) Englewood, CO, Libraries Unlimited.
- Dervin, B. (1996). 'Chaos, order and sense-making: a proposed theory for information design', in: R. Jacobson, *ed., Information design*. Cambridge, MA: MIT Press.
- Eaglestone, B., Ford, N., Nuhn, R., Moore, A., and Brown, G.J. (2001) 'Composition systems requirements for creativity: what research methodology?' in: Claude Lomelí Buyoli and Ramón Loureiro, *eds. Proceedings: workshop on current research directions in computer music, Barcelona, November 15-17, 2001*. pp. 7-16 Barcelona: Pompeu Fabra University.
- Heidegger, M. (1971) 'The origin of the work of art' in M Heidegger, *ed. Poetry, language, thought.* (pp. 15-87) New York, NY: Harper and Row, New York
- Holmstrom, J.E. 'Decimal classification mechanized by microphotography and keyed by a special alphabetical system', in: Report and papers submitted. (1948). *Papers presented at the Royal Society Scientific Information Conference*. London: Royal Society. pp. 384-404
- Husserl, E. (1970) *The crisis of European sciences and*

transcendental phenomenology. Evanston, IL: Northwestern University Press.

- International Conference on Scientific Information. (1959) *Proceedings of the International Conference on Scientific Information, Washington, DC. - November 16-21 - 1958*. Washington, DC: National Academy of Sciences - National Research Council.
- JESSE (2002) *Practitioner experience/knowledge in LIS research.* [24 messages] Available at: http://listserv.utk.edu/cgi-bin/wa?A1=ind0203&L=jesse#55 [Site visited 10th July 2002]
- Kuhlthau, C. C. (1994). *Seeking meaning: a process approach to library and information services*. Norwood, NJ., Ablex Publishing.
- Minger, J. (2001) 'Embodying information systems: the contribution of phenomenology.' *Information and organization*, **11**, 103-128
- Needham, J. (1937) *Integrative levels: a revaluation of the idea of progress.* Oxford: Clarendon Press.
- Ng, K.B. (2002) 'Toward a theoretical framework for understanding the relationship between situated action and planned action models of behavior in information retrieval contexts: contributions from phenomenology.' *Information Processing and Management*, **38,** 613-626
- Read, D.R. 'The length of scientific papers', in: Report and papers submitted. (1948). *Papers presented at the Royal Society Scientific Information Conference*. (pp. 530-532.) London: Royal Society .
- Report and papers submitted. (1948). *Papers presented at the Royal*

Society Scientific Information Conference. London: Royal Society.

- Royal Botanic Gardens (1948) 'A note on botanical periodicals', in: Report and papers submitted. (1948). *Papers presented at the Royal Society Scientific Information Conference*. (pp. 368-369.) London: Royal Society.
- Scott, C. (1959) 'The use of technical literature by industrial technologists', in: *Proceedings of the International Conference on Scientific Information, Washington, DC. - November 16-21 - 1958*. (pp. 245-266) Washington, DC: National Academy of Sciences - National Research Council.
- Spencer, H. (1862) *First principles*. London: Williams and Norgate, 1862 (A system of Synthetic Philosophy ; v. 1)
- Union of International Associations (2002) *Integrative knowledge project: levels of organization.* Available at: http://www.uia.org/uialists/kon/c0841.htm [Site visited 28th May 2002]
- Willett, P. (2000) 'Textual and chemical information processing: different domains but similar algorithms.' *Information Research*, **5**(2) Available at http://informationr.net/ir/5-2/paper69.html [Site visited 4th May 2002]
- Wilson, T. D. (1981). 'On user studies and information needs.' *Journal of Documentation*, **37**(1), 3-15.
- Wilson, T. D. (1999). 'Models in information behaviour research.' *Journal of Documentation*, **55**(3): 249-270.

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